

## [CLAIMS]

- Sub A2
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1. A method for manufacturing a Thin Film Inorganic Light Emitting Diode device, said method comprising the following steps, in order, :
    - (1) preparing a nanoparticle dispersion of ZnS doped with a luminescent centre by precipitation from appropriate aqueous solutions comprising zinc ions, sulfide ions and dopant ions,
    - (2) washing said dispersion of doped ZnS to remove non-precipitated ions,
    - (3) coating onto a first conductive electrode said washed dispersion of doped ZnS, optionally after admixture with a binder,
    - (4) applying on top of said coated layer resulting from step (3) a second conductive electrode, with the proviso that at least one of said first and second electrode is transparent.
  2. A method according to claim 1 wherein said precipitation of step (1) is performed according to the double jet principle whereby a first solution containing zinc ions and a second solution containing sulfide ions are added together to a third solution.
  3. A method according to claim 2 wherein said first solution also contains said dopant ions.
  4. A method according to claim 1 wherein said dopant ions are  $\text{Cu}^{2+}$  ions.
  5. A method according to claim 1 wherein said dopant ions are  $\text{Cu}^{+}$  ions.
  6. A method according to claim 1 wherein said dopant ions are  $\text{Mn}^{2+}$  ions.
  7. A method according to claims 1 wherein said washing of said dispersion of doped ZnS is performed by an ultrafiltration and/or diafiltration step.

8. A method according to claim 7 wherein said ultrafiltration and/or diafiltration step is (are) performed in the presence of a compound preventing agglomeration of nanoparticles.
9. A method according to claim 8 wherein said compound preventing the agglomeration of nanoparticles is a polyphosphate or polyphosphoric acid.
10. A method according to claim 1 wherein said first electrode is an Indium Tin Oxide (ITO) electrode.
11. A method according to claim 1 wherein said first electrode is a foil comprising a polythiophene/polyanion complex.
12. A method according to claim 11 wherein said polythiophene/polyanion complex is a poly(3,4-ethylenedioxythiophene)/polystyrene sulphonate complex.
13. A method according to claim 1 wherein said second conductive electrode is an aluminum electrode applied by vacuum deposition.
14. A Thin Film Inorganic Light Emitting Diode device manufactured according to the method of any of the previous claims.

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